Atlantic Richfield Company

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June 5, 2012

Mr. Steven Way
On-Scene Coordinator
Emergency Response Program (8EPR-SA)
US EPA Region 8
1595 Wynkoop Street
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Delivered via e-mail

Subject: May 2012 Monthly Progress Report
Rico-Argentine Mine Site – Rico Tunnels
Operable Unit OU01, Rico, Colorado

Dear Mr. Way,

This progress report describes activities conducted during the month of May, 2012 at the Rico-Argentine Mine Site and activities anticipated to occur during the upcoming month. These activities are organized by task as identified in the Removal Action Work Plan. This progress report is being submitted in accordance with Paragraph 35.a of the Unilateral Administrative Order for Removal Action (the "UAO"), dated March, 2011.

ACTIVITIES FOR MAY

This section describes significant developments during the preceding period including actions performed and any problems encountered during this reporting period.

Site-Wide Activities

- The Flood Dike Upgrade work was initiated during May. Mobilization for the Flood Dike Upgrades was completed.
- Continued compiling an aerial photographic history/timeline of the site conditions from available imagery.
- Historic documents and maps were obtained from local sources. Digital archives are being reviewed by the Atlantic Richfield project team for information that may provide a better understanding of the Rico site.

Task A – Pre-Design and Ongoing Site Monitoring

- Field data was collected at the two flumes during the May surface water sampling event.
- Surface water flow measurements were collected per protocols contained in the Sampling and Analysis Plan for Surface Water Sampling (SAP).
- Surface water samples were collected at locations and per protocols identified in the SAP.
- Surface water samples were submitted for laboratory analysis per protocols identified in the SAP.
- Ground water samples were collected at the 12 new wells completed in 2011 and seven (7) pre-existing wells located onsite.
- Ground water samples were submitted for laboratory analysis per protocols identified in the SAP.
- Flumes were inspected for debris buildup.

- Prepared digital output files for all surface water sampling analytical laboratory results from December 2010 through February 2012 from data spreadsheets (December 2010 and April 2011) and electronic data deliverables (EDDs; May 2011 through February 2012). Issues identified during thorough QA/QC review were resolved with the analytical laboratory at the end of May. These digital files will be transmitted to URS on behalf of EPA in June 2012. The laboratory issues with the EDD files did not impact the validity of February data posted to the SharePoint site.
- Downloaded available data through mid-April 2012 from the Parshall flume data loggers. The data will be posted to the project FTP site in early June.

Task B – Management of Precipitation Solids in the Upper Settling Ponds

- Conducted inspection of the pond system embankments, water levels and general conditions.
- Continued work on geotechnical seepage and stability analyses of flood dike and pond embankments.
- The construction fleet and staff were mobilized to the site for the Flood Dike Upgrades.
- The flood dike upgrades have been set out/staked in the field by survey personnel in accordance with the Flood Dike Upgrades Technical Memorandum (TM) approved by EPA.
- A riprap source has been identified that complies with the hardness specification for embankment armoring.
- Delivery of riprap for the flood dike armoring was initiated.
- Delivery of the sand filter material for seep repairs on the flood dike was initiated.
- The storm water controls have been placed per the SWPPP and Work Plan.
- Production of the riprap filter material was initiated.
- The slopes and fill areas have been cleared and grubbed at the north areas adjacent to Pond 15 and 18 to prepare for slope armoring.
- The north seep (P-18-S) repairs have been started with the area shaped and a portion of the sand filter placed.
- The Flood Dike has been shaped to accommodate equipment access for filter and riprap placement per the TM.
- Pond 15 solids removal equipment has been secured to assure mid-summer availability.
- Research and preparation of the field work plan for the solids removal at Pond 15 continued through May.
- Continued research of equipment and method options for Pond 15 solids removal.

Task C – Design and Construction of a Solids Reposltory

- Continued work on geotechnical analyses of an alternative drying facility and repository sites, focusing current attention on Pond 13 as an interim and potentially final drying and/or solids repository site.
- Completed analysis of physical properties for the test pit soil samples and provided results for geotechnical evaluation.

Task D – Hydrauiic Control Measures for the Collapsed Area of St. Louis Tunnel Adit

- Downloaded data fronf the transducer located at the St. Louis tunnel at bore hole AT-2.
- Completed draft of Supplement to Investigation Plan for Collapsed Adit Area at St. Louis Tunnel for intemal review. and then submittal to EPA in early June 2012.

Task E – Source Water Investigations and Controls

- Collected water samples at the St Louis tunnel discharge for bench scale ion exchange (IX) testing as part of site water treatment evaluation.
- Continued review of historic mine maps and other documents.

- Continued detailed planning for testing of ion exchange treatment of source waters.
- Secured pump and equipment to complete the Blaine Base Flow Measurement work.
- Additional heating equipment was identified to aid in melting ice in the 517 shaft as may be required.

Task F – Water Treatment System Analysis and Design

- Continued scoping of work to address data needs for water treatment system alternatives evaluation.
- Initiated conceptual planning/data collection for work up to and including bench scale tests for constructed wetlands/SRB treatment of St. Louis Tunnel discharge water.

ACTIVITIES FOR UPCOMING MONTH

This section describes developments expected to occur during the upcoming reporting period, including a schedule of work to be performed, anticipated problems and planned resolution of past or anticipated problems.

Site-Wide Activities

- Completed March Surface Water Sampling Report. The Report was in QC review at the end of May and will be posted to the project FTP site in June. (https://extranet.aecom.com/sites/ricostlouis/SitePages/Home.aspx)
- Continue incorporation of historic aerial imagery of the site and vicinity into the aerial photographic history/timeline of site conditions.
- Continue development of a geologic/geotechnical model of the site utilizing RockWorks data visualization software.
- Continue reviewing the digitally archived historic documents and maps.
- Qualify and issue Invitation to Bid for dredge and drilling contractors for upcoming Pond 15 solids removal.

Task A – Pre-Design and Ongoing Site Monitoring

- Conduct surface water and groundwater sampling/analyses and flow measurements per protocols contained in the SAP.
- Implement improvements for collection of water samples and flow measurements at the St Louis Tunnel.
- Post surface water quality data to the FTP site.
- Download data from the Parshall flume data collectors and post to the project FTP site.
- Continue work on overall site Data Management System development.

Task B – Management of Precipitation Solids in the Upper Settling Ponds

- Continue evaluation of calcine tailings/Pond 18 solids SPLP and associated geochemical testing.
- Award contract for the Interim Flood Dike Upgrades.
- Delivery to the site of the riprap filter material is scheduled to start on June 4, 2012.
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- Complete construction of the Interim Flood Dike Upgrades in accordance with the approved Work Plan.
- Continue securing equipment and materials required for 2012 season construction activities.
- Prepare the Work Plan for the Pond 15 Solids Removal.

Task C – Design and Construction of a Solids Repository

- Continue evaluation of alternative locations, including Pond 13, as possible alternative treatment solids repository and/or drying facility sites.
- Continue geotechnical analyses to support design of a permanent drying facility and repository, Including scoping additional targeted site investigations and laboratory testing to address data gaps.
- Continue efforts to secure access to lands needed for a permanent drying facility and solids repository.

Task D – Hydrauiic Control Measures for the Collapsed Area of St. Louis Tunnel Adit

- Monitor/download data from the transducer at drill hole AT-2.
- Finalize and submit to EPA in eariy June the Supplement to Investigation Plan for Collapsed Adit Area at St. Louis Tunnel for additional site investigations and laboratory testing to address data gaps to support evaluation and design of hydraulic control measures.

Task E – Source Water Investigations and Controls

- Continue development of a plan to implement the source control data collection and analysis that incorporates temporary management and treatment technology testing of mine waters intercepted in the Blaine workings as part of the source control Technical Memoranda required under this Task E.
- Track planning and implementation of underground mine stabilization and mine access security improvements at 517 Access Tunnel-Blaine mine workings by CDRMS.
- CDRMS to prepare bid documents for the underground work and provide to Atlantic Richfield for review.
- Pending mitigation of icing conditions of 517 shaft, CDRMS to initiate the Blaine Base Flow Measurement Test and test water to be pumped into the 517 shaft. AR is providing equipment and technical support assistance to CDRMS.
- Mobilize materials and equipment needed for Blaine flow measurements.
- Continue preparation of the Blaine Flow Interception Test Work Plan.
- Continue work on compilation of relevant historic mine workings and information from ongoing EPA studies into AutoCAD 3D model of the mine workings reporting to the St. Louis Tunnel.

Task F – Water Treatment System Analysis and Design

- Continue geotechnical analyses of flood dike and pond embankment seepage/piping and stability under static and seismic loading in support of final evaluation of long-term improvements.
- Initiate bench scale IX testing on water samples from St Louis Tunnel and Blaine Tunnel.
- Continue development of Ion Exchange Bench and Pilot Scale Tests Work Plan.
- Scoping of data needs related to treatment system alternatives.

If you have any questions, please feel free to contact me at (951) 265-4277.

Sincerely,

Anthony R. Brown
Project Manager
Atlantic Richfield Company

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